

Invertebrata

Tasmania's Invertebrate Newsletter

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Invertebrata is produced by the Queen Victoria Museum and Art Gallery, Launceston, Tasmania.

We publish articles and short notes on all aspects of invertebrate biology and conservation in Tasmania.

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Letter to the editor, The Examiner newspaper, Launceston, 16 February 1999:

A Baygon advertisement (*The Examiner*, Jan. 20) states the European wasp was first sighted in Victoria 1977.

This is wrong.

I returned from Victoria to live again in Deloraine in 1971. My foster father, Jack Nugent, was skinning rabbits when I noticed wasps flying around the dressed rabbits. I asked him what sort of insects were they; he didn't know.

Over the past few years I've heard so many differing stories about the wasp. One story is that it was supposed to have come into Tasmania via New Zealand.

Whoever put that story over has become confused with ragwort.

Now I read where it was first sighted in Victoria. Actually it was brought into this country by the Tasmanian Government back in the late 1950s to eradicate this State of the sirex wasp, which bored holes in the radiata pine trees.

Almost every elderly person to whom I speak remembers the event. No one can pinpoint the year but they do remember it.

The problems are when governments make errors they do their best to hide and cover up their mistakes by rewriting history.

But so long as there are people around who do remember the governments won't be allowed to forget.

Chas J. Candan, Deloraine



Baygon is right. European wasps were first sighted in Victoria in 1977, but in Tasmania in 1959. The Sirex control story is nonsense. — Ed.

Cuties in the pouch: the other marsupials

The reproductive habits of the furry marsupials attract a great deal of attention, but the pouch brooding of a number of invertebrates is just as (even more?) fascinating. We have been increasingly interested in the reproduction of talitrid amphipods and a recent (modest) grant from the internal ARC research grants scheme will allow us to carry out experimental work in 1999.

All peracarid crustaceans (amphipods, isopods, mysids etc.) brood their eggs and the first couple of instars of young in a ventral pouch formed by the brood plates, which arise from the bases of the first few pairs of legs. Brooding in mysids has recently been looked at David Ritz in our department and Honours student Nadine Johnson, while we have concentrated on the terrestrial groups, especially the talitroideans. These provide an interesting functional series of species between the marine ancestors (the aquatic hyalid amphipods), through the amphibious palustral talitrids (*Eorchestia* spp.) which live in salt-marshes, the intertidal beachfleas and sandhoppers to the fully terrestrial landhoppers.

The ability to protect the eggs and young in a pouch was probably an important pre-adaptation for life on land, so it is no surprise that two peracarid groups, the talitrids and the oniscoid isopods, have been the only crustaceans to fully colonise dry land. Although we hate to admit it, the slaters have done it better than the landhoppers, in the sense that they have made a more extensive colonisation both geographically and ecologically. Slaters are widespread on all continents except Antarctica, and there are several species which live in semi-arid and desert areas. The landhoppers, on the other hand, have their most extensive radiation in the Southern Hemisphere, though there have been several independent colonisations of land elsewhere, especially on oceanic islands.

It could also be said that the brooding system of slaters is more sophisticated than that of the landhoppers. The acme of crustacean brooding is seen in some slaters which have a placenta-like system of cotyledons which develop between the eggs and supply them and the young with water and a nutrient solution.

The talitrids appear to have evolved a very different approach to brooding. Whereas the terrestrial slaters retain the same sort of tightly closed marsupium as their aquatic ancestors, increasing terrestriality in talitrids is associated with an increasingly open brood pouch. In the aquatic hyalids and the palustral marsh-hoppers the brood plates are edged with hook-tipped setae which interlock to hold the plates together. In the more terrestrial species the brood plates become narrower and the setae lose their hooks and decrease in number. In the genus which has the most xeric species in Tasmania, *Keratroides*, the last pair of brood plates is lost altogether.

Work in Tasmania by a UK colleague, Dr David Morrith of Royal Holloway College in the University of London, has shown that the female is able to regulate the osmotic concentration of the fluid which bathes the eggs in the brood pouch. She does this both by trickling urine from the excretory pores at the base of her antennae into the pouch and by loading and unloading fluid from her underside via the uropods. This last mechanism was discovered by Tasmanian Honours student Maria Moore.

We suspect that the open brood pouch allows the female landhopper access to her brood to clean them and turn them. This sort of close association between mother and young also provides her with the opportunity to select between her offspring. We know that the number of eggs in a brood decreases as the brood develops, and we would like to know whether the loss is simply a mechanical one as the eggs grow and the pouch becomes overcrowded, other whether the mother actively rejects dead, slow-growing or smaller eggs. Control of the sex ratio of the brood is also possible.

We have observed pouch young with dark food in their guts, which suggests either that they leave the pouch to feed (recorded in some aquatic amphipods) or that their mother presents them with food. We also know that the female will recover and re-position eggs that have been removed from the pouch, which raises the question of whether the mother can recognise her own brood.

Brooding and parental care in general are active areas of research, but much of the evidence is drawn from vertebrates. The talitrid amphipods have a number of advantages for this sort of research (size, abundance, wide ecological and evolutionary range), quite apart from broadening the base on which general theories can be built.

And a first instar landhopper peeping out between the brood plates is just as cute as any furry marsupial.

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More information:

- Hoese, B. and Janssen, H. H. 1989. Morphological and physiological studies on the marsupium in terrestrial isopods. *Monitore Zoologico Italiano N.S. Monografia* 4: 153-173.
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- Morrith, D. and Richardson, A. M. M. 1998. Female control of the embryonic environment in a terrestrial amphipod, *Mysticotalitrus cryptus* (Crustacea). *Functional Ecology* 12: 351-358.
- Warburg, M. R. 1993. *Evolutionary Biology of Land Isopods*. Berlin: Springer-Verlag.

Response to article ➡

In February I sent a draft of the article on NHT funding to DPIWE. The following comments were received from Dr Sally Bryant, who is the Zoologist with DPIWE's Threatened Species Unit. Dr Bryant is also President of Birds Tasmania.

— Ed.

Bob's article has highlighted a well-known phenomenon which stems not from recent NHT times but back to the days when vertebrates, predominantly birds and mammals (not even fish, reptiles or amphibians) were the only species moulding wildlife legislation. In our Uni's case we are entirely restricted funding-wise by which species are listed on the national Act. I would encourage Bob and other invertebrate specialists that the best use of their time is to make these paper submissions, as Pierre Horvitz did for *Astacopsis gouldi*, so that invertebrates gain the prominence they deserve. If it is any consolation invertebrate project applications have constituted by far the bulk of my workload and that of the Forest Practices Unit Zoologist. Also take heart in the fact that protecting large and mobile species like birds, can by default, help a lot of others along the way.

Birds 5, bugs 1

The NHT is perpetuating the conservation bias against invertebrates

The Natural Heritage Trust (NHT) is the Commonwealth Government's omnibus program for delivering public money for conservation work in Australia. Created in 1997 and funded by the part-sale of Telstra, the NHT is now into year 3 of its proposed four-year life.

Fauna conservation is supported by the NHT though the NHT grants program. The table below lists the 18 projects which came through the grants application/assessment procedure in the first two NHT years and which specifically target native Tasmanian fauna. While dollar totals are not a particularly good measure of conservation effort, let alone conservation effectiveness, they do reflect conservation priorities. What are those priorities?

As the table shows, of the two-year total of \$1.2 million, only 10% went to invertebrates. Bird projects got 48% of the \$1.2 million, nearly five times as much. Of the \$831,400 passing through DPIWE, 58% went to birds and 11% to invertebrates.

Given that invertebrates make up most of the faunal biodiversity in Tasmania (whether measured as genetic richness, species richness, community richness or complexity of ecological interactions) and comprise the vast majority of species at risk, why is it that they received only 10% of the NHT funding for fauna conservation? And why have birds done so well?

The NHT funding bias is a continuation of the pattern seen in the Commonwealth's Endangered Species Program (ESP) before it was absorbed into the Trust. Tasmanian fauna conservation projects received nearly \$1.8 million under the ESP in the years 1990-97. Bird projects got 59% of the total, invertebrates 12%.

Overall, of the nearly \$3 million allocated to fauna conservation projects in Tasmania in the past nine years, more than half (52%) was spent on four birds: orange-bellied parrot, swift parrot, wedge-tailed eagle and forty-spotted pardalote.

Decisions on NHT grant applications are taken behind closed doors, and it isn't clear at which level the pro-bird bias is most effective. In other words, do 'bird applicants' confidently apply for large grants, knowing the Commonwealth will look kindly on bird conservation projects, while 'invertebrate applicants' ask only for small amounts, hoping for luck with a Commonwealth uninterested in invertebrate conservation? Or does sifting and sorting go on at a higher level, so that no matter what the priorities in each year's applications, birds will always get most of the money?

Whichever the case, look for continued prosperity for bird conservation in the 1999-2000 NHT program, and look to other funding sources if you're trying to conserve Tasmanian invertebrates.

Bob Mesibov (Ed.)

Sources:

ESP 1990-1996. *State of the Environment Tasmania, Volume 1 – Conditions and Trends*, State of the Environment Unit, Department of Environment and Land Management, Tasmania; Hobart, 1996. (Table 5, Biodiversity section, p. 4.20)

ESP 1996-1997. Attachment to media release, 'Natural Heritage Trust – A New Era Begins', Commonwealth Minister for the Environment, 22 May 1997.

NHT 1997-1999. Natural Heritage Trust Unit, Tasmania.

Program	Project (Group or agency)	Funding (\$):		
		1997/98	1998/99	Total
Bushcare	Restoration of Striped Marsh Frog Habitat (Stanley Peninsula Landcare Inc)		9,925	9,925
Bushcare	Swift Parrot Habitat Rehabilitation Project (St Marys District High School Parents & Friends Group)	35,570	35,570	71,140
Bushcare	Wildlife on Farms (Friends of Wildlife — Tasmanian Conservation Trust)	15,200		15,200
Endangered Species	Community Involvement in the Recovery of <i>Astacopsis gouldi</i> (DPIWE)		48,200	48,200
Endangered Species	Implementation of the Recovery Plan for the Wedge-tailed Eagle (DPIWE)		73,100	73,100
Endangered Species	Orange-Bellied Parrot Recovery Program 1998-2000 (Phase 3) (DPIWE)		210,000	210,000
Endangered Species	Recovery of the Endemic Pedra Branca Skink (DPIWE)	15,000	39,500	54,500
Endangered Species	Spotted Handfish Recovery Plan (CSIRO Division of Marine Research)		167,599	167,599
Endangered Species	Swift Parrot Recovery Plan 1996 (DPIWE)	37,800	106,500	144,300
Endangered Species	Tasmanian Galaxias Recovery Plan (DPIWE)	79,300	65,000	144,300
Endangered Species	Tasmanian Wedge-tailed Eagle Recovery Plan (DPIWE)	8,000		8,000
Endangered Species	Threatened Burrowing Crayfish Recovery Program (DPIWE)	40,000		40,000
Fisheries Action	Monitoring & Education Program for a Threatened Tasmanian Seastar (Woodbridge Environment Group)		16,900	16,900
Landcare	Property-based Wildlife Management Program for Conservation Outcomes (DPIWE)		60,000	60,000
Waterwatch	Waterwatch & Crayfish Recovery Project (Burnie/Wynyard Regional Waterwatch)		20,000	20,000
Wetlands	Conservation Strategy & Management of Tasmania's Shorebirds (Birds Tasmania)	25,000		25,000
Wetlands	Leap Frog — Rehabilitation of Habitat for Recovery of the Green & Gold Frog (Deloraine Field Naturalist Group)		47,000	47,000
Wetlands	Protection of Threatened Nesting & Migratory Shorebirds in Tasmania (DPIWE)	49,000		49,000
Totals		304,870	899,294	1,204,164

Snow flea, where are you?

Ever heard of *Apteropanorpa tasmanica*, the Snow Flea? Well, I'm beginning to wish that I never had! My search for this tiny creature has become a bit like the quest for the Holy Grail, and it is all our esteemed editor's fault!

What's a Snow Flea? It's a wingless scorpion fly (Order Mecoptera) and this species is endemic to Tasmania. It's very small and likes high country and the cold (as in snow). I don't. The tiny paragraphs devoted to snow fleas in books mention that they may feed on mosses, that they have been observed running across the snow and that nobody knows much about them.

Who am I? A non-scientific member of the public who happens to like bugs. I don't know much about them, but I like them. Rummaging in the bush and turning over stones and logs to see what crawls out is a favourite pastime of

mine.

The saga of the Snow Flea started with a specimen that Bob Mesibov found near Cradle Mountain whilst out on one of his invertebrate hunts. He said, 'You have to come and have a look at this strange creature I found.' And a few weeks later, something along the lines of 'Wouldn't this be a great project for you, so little is known about the Snow Flea.' Silly me said, 'Yes, why not?'

My numerous trips to the Cradle Mountain area during the autumn and winter months have so far failed to produce a single specimen. The only one I have ever seen is the pickled one in Bob's lab. Our editor, I believe, was a little sceptical of my efforts and decided that he and his wife Trina would accompany me on one of my flea-catching expeditions. The day turned out to be very cold, very wet, very windy and very unproductive.

The day our search took place, two of Bob's workmates climbed to the summit

of Cradle Mountain. The following week, when told what a Snow Flea looks like (a deformed ant?), they were convinced they'd seen one on the summit. Someone else has informed me that an entomologist friend had seen them on Mt Field. All very encouraging I'm sure! I'm beginning to think that the only place I'll find one is on a snow-covered peak with a blizzard howling around my head.

I'm now waiting for autumn so that I can resume the search with renewed enthusiasm, determination and very good wet weather gear. Any hunting tips would be greatly appreciated.

Renate van Riet
(frustrated but very patient bug-hunter)
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[P.S. The Cradle Mountain specimen, a female, is no longer in my lab. It went to *Apteropanorpa* investigator Dr David Yeates (University of Queensland), who says it may be a new species. Male specimens are needed. Um...Renate? —Ed.]

Jellyfishes and their human 'relations'

1998-1999 has been the season for jellyfish, in Hobart and Adelaide particularly, since the arrival on our shores of Lisa-ann Gershwin, from California. Lisa is doing a PhD on jellyfish at Berkeley, and is also currently spending a year in Australia on a Fulbright Scholarship researching Australian jellyfish species. She has changed my outlook on jellyfish forever. No longer will they be lumps of stinging jelly, but 'critters' of extreme interest.

Lisa is in Australia to study the impact of jellyfish on commercial fisheries and the evolution of jellyfish symmetry from the Precambrian (about 600 million years ago) to the present. South Australia is the centre for her evolution work as it has the world's largest collection of jellyfish fossils.

Lisa's work over the past few years has led to her discovery of specimens of jellyfish such as *Aurelia aurita* which have 3, 5 or 7 rays instead of the typical 4-parted form. She has discovered that these aberrant forms are actually clonemates of normal forms — in other words, 3, 4, 5 and 6-parted forms can

be clonemates of each other. We had great fun in the last spring/summer collecting samples from Constitution Dock in Hobart, some of which possessed these odd parts. She has also found over 20 new species of jellyfish during the past 6 months, with Tasmania one of the richest collecting grounds. Presently in Adelaide, Lisa will return to Tasmania soon to search for a metre-wide giant jellyfish which several people have reported seeing in southern waters.

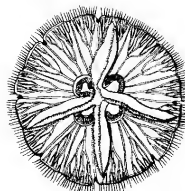
During this last summer Lisa has travelled nearly all of Australia's coastline studying the impact of jellyfish on fish farms. In southern Tasmania, countless *Aurelia aurita*, or 'moon jellies', are caught in currents and become 'plastered' against the nets of the fish cages on farms, cutting down water circulation. The deaths of thousands of fish are being investigated.

In early February this year, Lisa and I went to Eaglehawk Neck and Port Arthur on a jellyfish hunt. Lisa has held the suspicion that possibly there are two blue-bottle species of *Physalia* in southern waters, and it is possible that she found both washed up on Pirates Bay. She has taken tentacles for DNA analysis. Having never actually seen a *Physalia* in its natural state, she was very excited. I was equally excited to find countless specimens of young *Velella*

velella, or 'by-the-wind-sailors', having never seen them washed up before. Along with millions of stranded salps were some specimens of *Phronima* sp., a small, white amphipod which removes the soft parts of the salp and lives in its casing. As Lisa had just read *For the Term of his Natural Life*, we squeezed in a bit of sight-seeing between the Pirates Bay bluebottles and moon jellies washed up on the tiny beach in front of the Port Arthur Penitentiary.

The Tasmanian Museum would be very interested in hearing reports or sightings of any unusual jellyfish or their relations. Life is not going to be the same again!

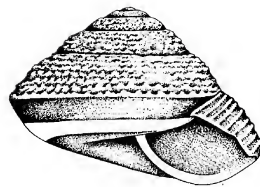
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Aurelia aurita

Anoglypta goes political

To follow the debate covered here, you need to know that *Anoglypta launcestonensis* is a large land snail endemic to northeast Tasmania. It was listed as 'vulnerable' in Schedule 4 of the Tasmanian Threatened Species Protection Act 1995. Kevin Bonham thinks *Anoglypta* should be de-listed. David Obendorf disagrees. For background information see the references listed in the bottom corner box. The most up-to-date source on *Anoglypta* distribution is the 1996 report for Forestry Tasmania, which also details Bonham's procedure for estimating the species' population and range size.



A SUBMISSION TO THE PROPOSED DE-LISTING OF *ANOGLYPTA LAUNCESTONENSIS* FROM THE SCHEDULES OF THE THREATENED SPECIES PROTECTION ACT 1995

ON BEHALF OF
THE LAUNCESTON
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To the Scientific Advisory Committee
(Threatened Species)
December 1998

(Executive Summary)

We ask that the Committee give consideration to the following:

The first comprehensive study of the distribution, habitat and conservation status was completed in 1996. It should be the baseline reference for subsequent surveys to demonstrate any change to the conservation status of the species.

De-listing a species should be dependent on a review of any improvement in the species population numbers and/or range when compared against the baseline field data of 1996. It should also be consistent with the guidelines and criteria for de-listing species under the *Tasmanian Threatened Species Protection Act 1995*.

There is no special management or recovery plan for *Anoglypta launcestonensis* which addresses the threatening processes identified. Without a demonstration of abatement in these processes there can be no justification for reclassification of conservation status or de-listing.

Approximately 20% (8266 ha) of the species estimated habitat is said to be in formal reserves, however, the Crown Land classification for the many of these reserves are not necessarily secure in the long term.

The remaining 80% of habitat is in State Forest or privately owned. Approximately 30% of the State Forest habitat is scheduled for clearing; if clear-felling followed by high intensity burning is adopted it is estimated that the minimum full-recovery time may take up to 90 years. Unless private land has been identified under the RFA to achieve the conservation objectives or is subject to a private conservation covenant, it is also insecure.

Due to bio-geographic restriction and its sensitivity to forestry operations and mining, under the RFA this species was one of a limited few to be specifically designated a species requiring a combination of reservation and management prescription to ensure its long-term conservation. De-listing may now not only jeopardise that designation but also the reservation of high quality rainforest and wet mixed forest habitats in NE Tasmania.

Dr David Obendorf
Co-ordinator

Launceston Environment Centre

Response:

My 1996 study of *Anoglypta* demonstrated that estimates used to 'justify' the original listing (as is often the case) were too conservative in virtually every relevant area, often by factors of 10. The listing of the species, under the loose criteria of the early 1980s, was unfounded, and now that it is clear that the snail was never threatened, it should be de-listed. *Anoglypta* has been formally assessed against the guidelines of the *Threatened Species Protection Act 1995*, and is nowhere near qualifying.

This species is so well protected by the combination of reserves and rainforest and streamside protection measures that no special management is required. The expected rate of clearance of habitat (despite 30% of it being nominally 'production forest') is projected at below or near the species' natural recovery rate. To threaten this species would take something as extreme as the revoking and clearfelling of all of several

large reserves. If that supposed possibility is reason to list it, almost every species that exists should be listed.

The RFA assessments were rushed and based on massive data errors, including a last-ten-years decline figure of 95% (should have been 5%) for *Anoglypta*, among many errors made by the RFA with snail data, not to mention their shaky priority-assessment techniques. Garbage in, garbage out.

The last sentence of the LEC's summary is disturbing. Many Greens want *Anoglypta* listed just because its bogus listing helps preserve areas they don't want logged. The end result of such attitudes is that confidence in the list is eroded (reducing industry compliance), and that research/conservation resources (and public awareness) are directed away from poorly known, rarer, invertebrates and areas which are often a far higher priority. Whatever the motivations, this is terrible conservation. A threatened species list should be a list of species which are threatened and their degree of threat, not a set of white lies for saving the rainforest.

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More information:

Kershaw, R.C. 1987. Type localities for six species of Tasmanian land molluscs (Pulmonata: Stylommatophora). *Papers and Proceedings of the Royal Society of Tasmania* 121: 57-68.

Kershaw, R.C. 1988. A study of the Caryodidae (Pulmonata). Part 1. *Anoglypta launcestonensis* (Reeve 1853). *Records of the Queen Victoria Museum* 93: 1-24.

Kershaw, R.C. 1989. The Tasmanian granulated snail. *Australian Natural History* 23(2): 166.

Bonham, K.J. 1996. *Distribution, habitat and conservation status of the Tasmanian endemic land snail Anoglypta launcestonensis* (Reeve, 1853). Unpublished report for Forestry Tasmania; Hobart: Forestry Tasmania, 52 pp.

Bonham, K.J. 1996. Two new varieties of the Tasmanian caryodid snail *Anoglypta launcestonensis*. *The Tasmanian Naturalist* 118: 42-50.

Museum news

Tasmanian Museum and Art Gallery (TMAG)

It has been an interesting spring/summer at the TMAG. We have had three visits so far from Lisa-ann Gershwin of Berkeley, University of California. An article on Lisa and her work is on p. 4 of this issue of *Invertebrata*. She gave talks to the University of Tasmania and the Tasmanian Marine Naturalists Association. I attended the latter and found her work on jellyfish and their life-cycles absolutely fascinating. I also learned a lot more about jellies during hunting trips! Her enthusiasm is very infectious.

Dr Richard Willens visited the TMAG in February. Richard is Curator of Molluscs at the Northern Territories Museum and is working on introduced molluscs in Australia. We 'brainstormed' on and off for three days, with Richard extracting every bit of information on my experience with introduced molluscs in Tasmania. A stimulating (if somewhat exhausting) experience, which I really enjoyed. While at the TMAG, Richard also studied examples of the different species of oysters growing in Tasmania, which should prove of assistance to the research carried out by staff of other government departments.

The warm, humid weather experienced in Tasmania during the summer brought into the TMAG a larger load of enquiries than usual, so it has been a very hectic time.

Liz Turner
Curator of Invertebrate Zoology
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Queen Victoria Museum and Art Gallery (QVMAG)

Zoology in the Queen Victoria Museum and Art Gallery has seen some major changes over the last few months, and there is promise of more to come. The most momentous of the changes is that Curator Tim Kingston has gone on extended leave and Brian Smith has stepped in as Acting Curator of Zoology, possibly until the end of 1999.

Tim and his wife Margot had the opportunity to go to North Queensland for an extended period in connection with Margot's work. After a deal of soul-searching, Tim decided to take

long service leave and leave without pay to move to Cairns for the year. Brian Smith, Research Associate in Malacology (and formerly Curator of Invertebrates and Senior Curator (Zoology) in the Museum of Victoria) has been appointed Curator of Zoology until Tim's return. Brian will be working three days a week: all day Monday, Wednesday morning, all day Thursday and Friday morning. Tim is keeping in touch by email but will hopefully not need to be consulted very often while he is away.

Assistant Tammy Gordon will be increasing her hours a little too. Tammy — formerly Tammy Scarborough — got married last October, and we wish her and Mark every happiness.

Rob Blakemore finished in the Museum in January when his funding ran out and has now gone on to bigger and better things on the mainland.

Brian Smith had a very quick trip to the U.K. before he took up his new position, visiting the Natural History Museum in London and the National Museum of Wales in Cardiff. The visits were connected with a project he is undertaking, updating the Pulmonate section of his *Zoological Catalogue of Australia* volume.

Along with the rest of QVMAG, Zoology will be swept up in reorganisation and planning for expansion and change during the coming year. As most of the readership of *Invertebrata* will know, QVMAG has been given control of the Inveresk Railway Workshops complex in Launceston. With Federal, State and local funding the Museum is taking over much of this very impressive industrial site and will be moving most of its Art, History and Industrial Science functions to Inveresk over the next couple of years. This will leave the Wellington Street building as a Natural History museum with more gallery space and more room to expand and consolidate the laboratory and collection areas in Zoology.

One of Zoology's main tasks for 1999 is to rehouse the invertebrate wet collection. The Museum has been given use of a large room in the TAFE College next door to the Wellington Street building. We will be installing a new 'Compactus' storage unit in the room and filling it with the invertebrate wet

collection from the Rocherlea store. The collection will be reorganised and the labelling brought up to standard. The TAFE room will also hold some of the larger zoological mounts, ending the crowding of the vertebrate dry collections and providing much-needed laboratory space in the Museum basement area. Planning will also be continued this year for a new, permanent wet store, probably on the far side of the car park at the Wellington Street building.

Because of all the work associated with reorganising the invertebrate holdings, we will have to put on hold for a while the processing of large loans. Once the reorganisation is complete, we will have a much better idea of the extent and condition of our holdings and will be able to service loan requests much more efficiently. In the meantime, Zoology at QVMAG is functioning much as ever and Brian, Tammy, Judy and Mark welcome inquiries into the happenings at the Museum.

Brian Smith
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Wanted!

■ Reports of 'people news' and invertebrate goings-on from the Department of Primary Industry, Water and Environment (DPIWE), Inland Fisheries Commission, CSIRO Marine Labs, University of Tasmania departments and any other agencies, institutions or individuals studying invertebrates in Tasmania.

■ We and our readers are especially keen to hear from non-professional zoologists with tales and tidbits about this State's wonderful invertebrate fauna. Items for the July *Invertebrata* should be posted or e-mailed to the editor before the end of June.

■ Pictures are very welcome, both to illustrate animals under discussion and to make *Invertebrata* look more interesting. Contributed pictures should preferably be black-and-white line illustrations, not in colour and not in a range of hard copy. Please send these as hard copy, as scanned bitmaps on diskette, or as JPEG files by e-mail.

■ Please contact the editor if you have any queries about the content or format of contributions.

Collections conference

The annual Council of Heads of Australian Entomological Collections (CHAEAC) meeting was held in Brisbane on 26th September 1998 prior to the Australian Entomological Society Scientific Conference. The Tasmanian chapter of CHAEAC meets twice a year to discuss progress in collaborative ventures and the in the development of collections. The national meeting sees delegates from most of the larger museums and university entomology collections in Australia as well as the Australian National Insect Collection (ANIC), New Zealand Arthropod Collection (Auckland) and some private and government organisations such as AQIS (Australian Quarantine and Inspection Service, represented for the first time at the 1998 meeting).

The theme of the 1998 meeting was incursions of insects into Australia. The role played by collections in detection and identification of exotic insects can be summarised as follows:

- Examination of collection records enables us to determine if a species has been recorded in Australia prior to a current incursion and so give an indication of establishment and frequency of interception.
- State collections of indigenous species enable the determination of likely 'exotics' or 'locals' to be made, thus speeding up the process of quarantine procedures if the intercepted species is thought to be new.
- Database links enable a national approach to be taken in the identification of, and action against exotics. This includes links between Australia and overseas collections.

It is important that State collections be maintained at a high taxonomic level in order to function as part of the national drive against exotic incursions. In Tasmania this involves the DPIWE collection at New Town, which is the depository of voucher specimens of exotic species intercepted entering Tasmania and is also the main agricultural pest collection; the Tasmanian Forest Insect Collection at Forestry Tasmania, which is

the main collection of insects of trees and timber; and the collections at the Tasmanian Museum in Hobart and Queen Victoria Museum in Launceston, which have historical records and are the main depositories of specimens received from the public.

There is a need for both public and amateur entomologists (often amateurs know more about the groups they are interested in than most professionals!) to check insect pests and diseases on garden plants in urban areas as it is in these areas that incursions may be first found. The current monitoring system by AQIS, DPIWE and Forestry Tasmania looks closely for pests and diseases in specific areas, i.e. wharves, agricultural crops and forests. Urban areas near sea ports are not currently monitored except for specific pests such as Asian Gypsy Moth, so vigilance by the public is important in protecting products vital to Tasmania's economy from exotic insect attack.

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Snail news from QVMAG

Now that I have got a few new responsibilities (see opposite page), my work on molluscs will have to take a bit of a back seat — but will not fade out completely. At present I am working on several mollusc projects. These are listed below in no particular order:

The *Zoological Catalogue of Australia Vol. 8 (Non-Marine Molluscs)* was published in 1992. I will be updating the pulmonate part of the 'ZooCat' and adding all new names and new information published between 1992 and the end of 1998. I will also include the listing of figure information for as many valid species as possible and the listing as new information of the three families of marine pulmonates (Siphonariidae, Trimusculidae and Onchididae) not included in the original work. The update will hopefully be published in electronic form in 1999.

Catalogue of Tasmanian Molluscs. This is an update of Ron Kershaw's 1956 list and most of the work on this compilation was done by Ron before he handed it over to me to complete. The organisation of this catalogue will be based on

that used in the recently published *Fauna of Australia* volume on Mollusca. The Tasmanian catalogue will hopefully also be completed this year.

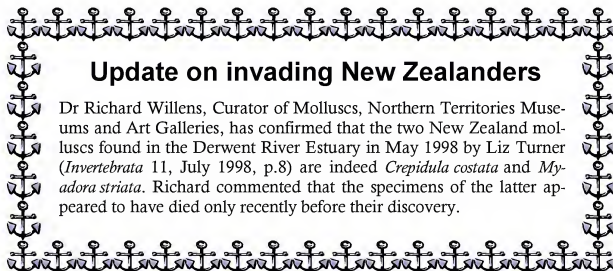
Revision of the charopid land snail genera *Mulathena* and *Flammulops*. More anatomical and radula work needs to be done with this project, but the revision is progressing well.

I am also still editing the journal *Molluscan Research*, with two issues due out during 1999 (May and November). Readers are welcome to contact me regarding any of these projects.

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Prof. Bugman doll draw held over!

For a chance of winning this amazing stuffed doll (40 cm high and crocheted all over with cuddly invertebrates — see *Invertebrata* 12 for the lurid details), send a donation of AUD \$5 or more as a cheque or postal order to: *Invertebrata* Doll, Queen Victoria Museum and Art Gallery, Wellington St, Launceston, Tasmania, Australia 7250. Proceeds will help cover *Invertebrata*'s production costs and assist the dollmaker's pet project, a penguin fence in Camdale, northwest Tasmania.



Update on invading New Zealanders

Dr Richard Willens, Curator of Molluscs, Northern Territories Museums and Art Galleries, has confirmed that the two New Zealand molluscs found in the Derwent River Estuary in May 1998 by Liz Turner (*Invertebrata* 11, July 1998, p.8) are indeed *Crepidula costata* and *Myadonna striata*. Richard commented that the specimens of the latter appeared to have died only recently before their discovery.

Invertebrates in the media

Our first sample was sent in by Jim Nelson of Weeena. 'Crayfish love..' appeared under a close-up photo of A. gouldi on p. 11 of the Herald Sun (Melbourne) on 22 January 1999. We can only suppose that Ms Pountney got her information from Mr Candusio. She clearly didn't bother to check her facts. 150 left?? Logging killed them off??

Crayfish love means little monsters on the way

by MICHELLE POUNTNEY, environment reporter

It's a face only a mother could love — and this female giant freshwater crayfish could have up to 200 to love.

Scientists are thankful the rare 15-year-old giant crayfish likes her partner.

The 200 eggs she holds under her tail — the result of successful mating between the only breeding pair of giant Tasmanian crayfish in the world — could save the species from extinction.

She, at 50 cm and 3 kg, and her partner, who is 75 cm long and 4 kg, are among fewer than 150 *Astacopsis gouldi* or giant Tasmanian crayfish known to exist.

Insectarium of Victoria head curator Bert Candusio said they were the largest freshwater crayfish and the largest freshwater invertebrate known to science.

Some specimens caught last century were more than a metre long and weighed more than 10 kg, but animals of that size are no longer seen.

Mr Candusio said the animals could live in water below 16 deg. for up to 50 years.

But logging in the isolated pockets of northern Tasmania where they lived had killed most of them off.

The male and female at the insectarium at Woodend, north-west of Melbourne, are at the start of their breeding lives.

Mr Candusio hoped about 100 young would grow to maturity from the 200 eggs being kept under mum's tail.

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Specimen no. 2 was published on the front page of Prime News 14 (1) February 1999, the newsletter of the Department of Primary Industries, Water and Environment (DPIWE). Grab your editing pencil, cross out the first 21 words in the first sentence (up to 'the insects...') and note the improvement.

Happy birthday creepy crawlies!

It is probably reassuring to know that not all insects are bad — and it's even more reassuring to know that all the insects in the collection at the DPIWE's New Town Laboratories are no longer alive.

The smell alone would be enough to knock them off — but curator of the Insect Reference Collection Trevor Semmens says it's the naphthalene flakes which ensure the specimens will be around for a longer time.

"It's an incentive to keep any unwelcome beasts out," he explains.

Trevor says that while some insects are bad, others are good and a lot are neutral. This year the collection turns 100 years old. Happy birthday!

Trevor is writing a brief history of the collection, which was started by Government Entomologist Arthur Lea in 1899.

During his time as entomologist from 1899 to 1911, Lea named and described over 5,000 beetles.

Included in the overall collection is a Tasmanian collection, a sub-collection of non-Tasmanian bugs, Lea's collection of non-Tasmanian insects, a quarantine specimen collection and an insect allies collection, which includes spiders, scorpions, mites etc.

It is estimated there are about 150,000 specimens, stored by being pinned, in alcohol or on glass slides.

In these formats and with care, they will hopefully last for hundreds of years.

Putting an estimate on the worth of the collection is impossible, but it could be in the vicinity of \$3 million. Of course, much of it is irreplaceable.

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Invertebrata welcomes media items for reprinting. They needn't be outrageous. Journalists sometimes write accurately and sympathetically about invertebrates.



Coming to Tasmania for a quick sweep?

A notice of your planned collecting trip in *Invertebrata* could put you in touch with local experts, enthusiasts and volunteer helpers. Local zoologists would also be interested to hear where you went and what you found!